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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JAN 20 1993

4WD-FFB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Byron Brant
Department of the Navy - Atlantic Division
Naval Facilities Engineering Command
Code 1822
Norfolk, Virginia 23511-6287

RE: Marine Corps Base Camp Lejeune NPL Site
Site 43 - Agan Area Dump
Jacksonville, North Carolina

Dear Mr. Brant:

EPA has reviewed the document titled "Draft Site Inspection Report - Site 43 Agan Area Dump" dated October 12, 1992. Comments on the draft documents are enclosed. These documents have been given a cursory review to provide you with guidance in developing an approach at the site to completing the site evaluation. EPA concurs with the recommendation for additional work. At the completion of the additional sampling the report should be resubmitted with a recommendation as to the final disposition of the site.

If you have any questions or comments, please call me at (404) 347-3016.

Sincerely,

A handwritten signature in black ink, reading "Michelle M. Glenn", is written over a horizontal line.

Michelle M. Glenn
Senior Project Manager

Enclosure

cc: Peter Burger, NCDEHNR
George Radford, MCB Camp Lejeune

COMMENTS
DRAFT SITE INSPECTION REPORT
SITE 43 AGAN AREA DUMP
MARINE CORPS BASE CAMP LEJEUNE

GENERAL COMMENTS

1. The Draft SI Report presents valid conclusions that chemicals of concern have been detected at levels exceeding Federal and state risk-based standards and screening criteria in samples collected from the shallow groundwater aquifer, surface water and sediment at the site, and exposure to these chemicals poses potential human health and ecological risks. The Draft SI Report also acknowledges the inadequacy of sampling data to evaluate the site conditions and contaminant migration. Additional samples should be collected from groundwater, surface water, sediment and soil to generate "a statistically significant" sampling database to further assess the extent of contamination at the site.
2. It is also concluded in the Draft SI Report that "surface water and sediments are contaminated with inorganics above standards for the protection of aquatic life/biota." However, "no conclusions can be made with respect to whether the inorganic levels are a result of the disposal activities or whether the levels are elevated throughout the ... marshes and streams." In this case, background control samples should be collected.
3. The first recommendation of the two presented in the Draft SI Report states that the site should not be investigated further since there are no significant impacts to the environment or current human health risks that could be attributed to sludge disposal. This statement appears to contradict the conclusions in the Draft SI Report and the second recommendation which proposes additional sampling at the site. Clarification should be provided.
4. The groundwater section of the Draft SI Report is deficient and contains inconsistent statements describing the Castle Hayne aquifer. The Castle Hayne aquifer, which underlies the shallow aquifer and is being used for drinking water supply, is described as being both "confined" and "semiconfined." Clarification should be provided as to whether the shallow aquifer and the Castle Hayne aquifer beneath the site are hydraulically interconnected. Since more than 90 water supply wells draw water from the Castle Hayne aquifer, and since the shallow aquifer is contaminated, there is a major concern over whether

contaminants from the shallow aquifer have migrated to the Castle Hayne aquifer, creating a public health risk. Therefore, groundwater samples should be collected from the Castle Hayne aquifer to provide useful information to determine whether migration of contaminants from the shallow aquifer has occurred. The thickness of the aquifer and confining units as well as the screened monitoring well intervals for this area should also be included and presented on a cross-section figure.

5. The Draft SI Report presents a preliminary risk assessment (PRA) that compares the concentrations of contaminants detected to Federal and state applicable or relevant and appropriate requirements (ARARs), to be considered (TBC) guidelines and advisories and risk-based preliminary remediation goals (PRGs). The PRA concludes that soil contamination poses no human health risk. However, it should be noted that the PRGs calculated for soil exposure were based on limited sampling data and reflect only the current setting of military residential land use at the site; neither a residential nor commercial/industrial future land-use scenario has been considered. Furthermore, for potential human receptors, the site-specific exposure duration value for noncarcinogenic risks was assumed to be 2 years, compared to a standard default value of 30 years under a normal residential land-use scenario. This value of 2 years was used in the calculation and resulted in an age-adjusted ingestion factor of 30 milligram-year/kilogram-day (mg-yr/kg-day) which is significantly lower than the EPA default value of 114 mg-yr/kg-day.
6. It is important to remember that the risk-based PRGs are initial guidance. They do not establish that cleanup to meet these goals is warranted. The PRGs may be revised based on the consideration of appropriate factors including, but not limited to exposure factors, uncertainty factors and technical factors. Included under exposure factors are the cumulative effect of multiple contaminants, the potential for human exposure from other pathways at the site, population sensitivities, potential impacts on environmental receptors and cross-media impacts of alternatives. Factors related to uncertainty may include the reliability of alternatives, the weight of scientific evidence concerning exposures, individual and health effects and the reliability of exposure data. Technical factors may include detection/quantification limits for contaminants, technical limitations to remediation, the ability to monitor and control movement of contaminants and background levels of contaminants. The final selection of the appropriate risk level is made when the remedy is selected based on the balancing of criteria.

7. The decontamination procedures for drilling and sampling equipment described in the Draft SI Report are deficient. The decontamination protocols should comply with the ECB SOPQAM and should be implemented for the additional sampling to be conducted at the site to ensure Level IV data quality for the sampling analyses.
8. A glossary of the acronyms used in the Draft SI Report should be compiled and included for easy reference purposes.

SPECIFIC COMMENTS

1. Page ES-1, 2nd paragraph - If the answer to item number one is "yes", then the answer to number three is "yes".
2. Page ES-2, Bullet 5 - Indicate what "NEESA" represents. The quality assurance/quality control sample collecting methods used should be no less stringent than the criteria set forth in the ECB SOPQAM.
3. Page ES-2, paragraph 1 - Define what is considered to be "significant organic soil contamination."
4. Page ES-3, 2nd paragraph - The classification of the aquifer is of more significance than the current use.
5. Page ES-4, "Recommendations" - The decision on whether or not an RI/FS will be required may be deferred until additional information has been collected.
6. Page 1-8, 5th paragraph - The use of hollow stem augers with an internal diameter of 4.25 inches does not meet the ECB SOPQAM (Section E.3.1) requirements for annular spacing for monitoring wells. A minimum annular spacing of 2 inches is required between the inside diameter of the auger and the outer diameter of the monitoring well during installation.
7. Page 1-9, 1st paragraph, Bullet 1 - Utilizing polyvinyl chloride (PVC) for construction of monitoring wells is not in compliance with the ECB SOPQAM (Section E.5.1). PVC is not acceptable for monitoring organic compounds because of its sorption and leaching properties. The ECB SOPQAM recommends that the well casing and screen be constructed of stainless steel (304 or 316) or Teflon.

8. Page 1-9, 2nd paragraph, 3rd bullet - The installation of a 0.5-foot bentonite seal is not in compliance with the ECB SOPQAM. The minimum thickness is 2 feet above the sand pack.
9. Page 1-10, 4th paragraph, Bullets 4, 5 and 6 - The use of hexane is not in compliance with the ECB SOPQAM (Appendix B.1) for decontaminating equipment. Pesticide-grade isopropanol is recommended. Because hexane is not miscible in water, it is not effective unless the equipment is completely dry. The use of hexane requires further justification. In addition, potential impacts on sample results or integrity should be included in the discussion of sampling results.

The use of distilled water rinse also is not in compliance with ECB SOPQAM. Distilled water may contain trace concentrations of organic and metal compounds. The water rinses should include deionized water rinse first and an organic-free water rinse following the solvent rinse.

The effect of these two deviations from the SOP should be discussed in light of the sample results.

10. Page 4-1, 3rd paragraph - The use of the term "instrument detection level" is inaccurate. The term "quantitation limit" should be used in the context rather than "instrument detection level." The instrument detection level, or detection limit (DL), is the lowest level of a chemical that can be detected by an instrument. A chemical present below that level cannot be distinguished reliably from the normal, random noise of an analytical instrument or method. DLs are chemical-specific and instrument-specific and are determined by statistical treatment of multiple analyses in which the ratio of the lowest amount observed to the electronic noise level (i.e., the signal-to-noise ratio) is determined. Due to the irregular nature of instrument or method noise, reproducible quantitation of a chemical is not possible at the DL. Generally, a factor of 3 to 5 is applied to the DL to obtain a quantitation limit (QL), which is considered to be the lowest level at which a chemical may be accurately and reproducibly quantitated. DLs indicate the level at which a small amount would be "seen," whereas QLs indicate the levels at which measurements can be "trusted."
11. Page 4-1, 6th paragraph - Regional background concentrations are not suitable for determining acceptable background concentrations. Background concentrations

should be collected in an area close to the site but unaffected by contaminants from the site or any other potentially contaminated sites in the area. The background concentrations for organic and inorganic compounds need to be presented in the table for comparison with the contaminants analyzed for the site.

12. Page 4-3, Table 4-1 - Why are the detection limits so high for the semi-volatile compounds?
13. Page 4-5, Table 4-1 - What is the explanation for the differences in concentration in sample 43MW0100 and the duplicate? These results seem to indicate a laboratory problem. What was the effect on the rest of the samples?
14. Page 4-8, Table 4-2 - What is thought to be the source of the mercury?
15. Page 4-12, Section 4.5, bottom of page - How can this statement be correct given the large differences identified in Table 4-1? How is this statement reconciled with those results?
16. Page 4-13, Table 4-4 - Once again, why were the detection limits so high? Significant contamination could exist and not be detected.
17. Page 5-1, Section 5.0 - This section should be heavily caveated in that the source of the various compounds detected is virtually unknown. It is very likely that elsewhere at this site, higher concentrations of the contaminants found exist.

In addition, this section has not been reviewed by the EPA Office of Health Assessment. Due to the current workload, only Baseline Risk Assessments (BRA) and BRA segments of work plans are under review.

18. Page 5-1, 2nd paragraph - More specific terms such as "groundwater pathway" and "surface water pathway" should be referred to in the discussion of contaminant migration pathways instead of the term "water pathway."
19. Page 5-2, 3rd paragraph - The paragraph states that the site is well vegetated except for a small area located in the center of the site; therefore, the potential for fugitive dust generation has been assumed insignificant. This assumption was made without sufficient site-specific assessment and discussion of contaminants migration potential through leaching, tracking and fugitive dust generation/deposition. Site conditions under a future land-use scenario should also be addressed.

20. Page 5-3, Table 5-1 - The Henry's Law constant cited for the chemical butyl benzyl phthalate is incorrect.
21. Page 5-5, 1st paragraph - The text states that "future residential use of the site itself has not been considered due to the fact that the area is swampy and highly infested with insects." Rationale should be provided to justify this assumption. A qualitative assessment should be made of the likelihood that the assumed future land-use will occur.
22. Page 5-6, Section 5.3.1, 1st paragraph - The statement "If compliance is achieved prior to any invasive remedial activity, the remedial action is the no action alternative." is unsettling and possibly misleading. Please delete the statement.
23. Page 5-6, Section 5.3.1, 3rd paragraph - It seems that this area may well be a floodplain and/or a wetlands. Please revisit the question of location-specific ARARs.
24. Page 5-7, 5th paragraph - The concentrations of inorganic contaminants detected in the soil samples should be compared to site-specific soil background concentrations, not the concentrations in the soils of eastern United States.
25. Page 5-8, Table 5-2 - The cancer slope factors of inhalation exposure for the chemicals of concern should be presented in this table.
26. Page 5-13, 1st paragraph - The total organic carbon (TOC) analysis should be conducted for the soils at the site to obtain a site-specific TOC value.
27. Page 5-18, 2nd paragraph - The second sentence is confusing. Please clarify.
28. Page 5-27, 2nd paragraph - This paragraph states that the mass fraction of organic carbon in the soil was not analyzed; therefore, a default mass fraction value from the open literature rather than a site-specific value was used in the calculation, resulting in uncertainty. This uncertainty could be eliminated if a mass fraction value was determined for the soils at the site.

29. Page 5-28, 1st paragraph - The statement: "It should be restated, however, that the shallow aquifer is not currently used as a drinking water source; thus there is currently no actual threat of risk." is misleading. While there may be no actual threat, for purposes of CERCLA, the classification of the aquifer drives remediation decisions.
30. Page 6-2 - EPA concurs with the conclusion that additional data is necessary prior to determining the disposition of this site.

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Byron Brant

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